

WHAT IS CLAIMED IS:

1. A method for forming a glass structure comprising:
providing a glass member with a generally planar surface; and
securing a rigid interlayer to the glass member such that the rigid interlayer
applies a compressive force to the surface of the glass member.

2. The method of Claim 1, further comprising:
securing a reinforcing structure to the rigid interlayer; and
securing a support member to the reinforcing structure.

3. The method of Claim 2, wherein securing the reinforcing structure to the
rigid interlayer includes:
providing a reinforcing member;
applying a resin to the reinforcing member to form the reinforcing structure;
applying the reinforcing structure to the rigid interlayer; and
curing the resin to bond the reinforcing structure to the rigid interlayer.

4. The method of Claim 3, wherein securing the reinforcing structure to the
rigid interlayer and securing the support member to the reinforcing structure are
performed substantially simultaneously when the resin is cured.

5. The method of Claim 3, wherein curing the resin is performed at a
predetermined temperature that is greater than or equal to a maximum temperature at
which the glass structure will be used.

6. The method of Claim 1, wherein after providing the glass member, the method includes forming the glass member to a predetermined shape.

7. The method of Claim 6, wherein the glass member is formed on a vacuum tool.

8. The method of Claim 6, wherein the step of securing the rigid interlayer to the glass member includes:

applying a resin over an area corresponding to a rear surface of the glass member; and

curing the resin to form the rigid interlayer.

9. The method of Claim 8, wherein curing the resin is performed at a predetermined temperature that is greater than or equal to a maximum temperature at which the glass structure will be used.

10. The method of Claim 1, wherein the glass member is a mirror.

11. A method for forming a mirror assembly comprising:
 - providing a mirror having a front surface that is associated with light reflection and a rear surface;
 - applying a resin to the rear surface of the mirror; and
 - curing the resin;

wherein the resin shrinks as it cures and applies a compressive force to the rear surface.
12. The method of Claim 11, wherein the compressive force has a magnitude that is sufficient to drive the whole of the mirror into a state of compression.
13. The method of Claim 12, wherein the mirror is preformed such that the front surface of the mirror conforms to a non-flat shape.
14. The method of Claim 13, wherein the non-flat shape is selected from at least one of: shapes formed at least in part by a spherical radius and parabolic shapes.
15. The method of Claim 11, wherein the resin is selected from at least one of unsaturated polyesters, bismaleimides, epoxy vinyl esters and epoxies.

16. The method of Claim 11, further comprising:
 - providing a reinforcing structure; and
 - securing the reinforcing structure to the rear surface of the mirror, the reinforcing structure supporting the mirror.
17. The method of Claim 16, wherein the reinforcing structure includes an interlayer and a support structure.
18. The method of Claim 11, wherein the mirror includes a glass panel having a thickness of about 0.001 inch to about 0.4 inch.

19. A method for forming a mirror assembly comprising:

providing a glass member having a glass panel with a thickness that is less than about 0.4 inch thick and a reflective material that is associated with a surface of the glass panel to effect light reflection, the glass member having a front surface and a rear surface;

forming the glass member such that the light reflecting surface conforms to a predetermined shape;

applying a resin to a surface of the glass member opposite the light reflecting surface;

applying a reinforcing member and at least one support structure to at least one of the surfaces of the glass member opposite the light reflecting surface and the resin; and

curing the resin such that the resin, the reinforcing member and the support structure cooperate to form a rigid interlayer that supports the glass member and facilitates mounting of the mirror assembly;

wherein the resin shrinks as it cures and applies a compressive force to the surface of the glass member opposite the light reflecting surface, the compressive force having a magnitude such that the entire cross-sectional thickness of the glass member is maintained in a state of compression.